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PROCEEDINGS  
OF  
THE ROYAL SOCIETY.

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1849.

No. 73.

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March 1, 1849.

GEORGE RENNIE, Esq., Treasurer, Vice-President, in the Chair.

A paper was read, entitled "Minute Examination of the Organ of Taste in Man." By Augustus Waller, M.D. Communicated by Richard Owen, Esq., F.R.S.

The author commences by describing his mode of observation, which differs from that followed by previous observers. It consists in removing from the living tongue one of the papillæ, and immediately subjecting it to examination. He then proceeds to describe, —1st, the epithelium; 2nd, the fungiform papillæ; 3rd, the conical papillæ; and 4th, the inferior surface with its mucous glands, &c.

1. The epithelium is of two kinds; the flat plates with a central nucleus, which are mostly found clothing the stem and other regions of the fungiform papillæ; and the globular cells which compose most of the external parts of the processes of the conical papillæ.

2. The fungiform papillæ are found to consist of numerous small cones seated on a common stem. These secondary cones, already described by Albinus, are completely hidden by a common investment of epithelium which fills up the irregular spaces between them. Each of these cones contains capillary vessels, which, at the apex of the cone, either form a simple loop or a complex coil which is covered only by epithelial scales of the most attenuated nature. The author states that in these capillary vessels the motion of the blood may be observed for several seconds after the removal from the living body, and may be excited for a long time by the application of a slight degree of pressure. By these means he has been enabled to watch the passage of the red and white globules contained in the blood, and to detect in the human papillæ all the various phenomena in the transparent membranes of the lower animals. By allowing the blood to coagulate in the vessels, beautiful examples of injected papillæ may be obtained. The congestion of the vessels is much increased by compressing the point of the tongue before the removal of the

papillæ. The capillaries are connected together at the bases of the secondary papillæ, and arise from a common trunk immersed in the body of the papilla. The nerves are found to subdivide in the separate cones, in which they ascend to the apex and terminate in abrupt extremities, as in the frog, toad, &c. In the fœtus the fungiform papillæ are stated to consist of a simple cone without any secondary papillæ.

3. The conical or filiform papillæ of man are described to be of a compound nature, consisting of numerous secondary cones springing from a common stem. Each of these secondary cones is clothed with an elongated process which is fitted on the cone like a sheath. This process consists of elongated epithelial scales ascending towards the summit, and resembling in general appearance the feather of an arrow. At their summit these processes are clothed with an external zone of granular matter, which considerably adds to their thickness. This granular matter is often detached after the papilla has been removed a short time from the tongue. The blood-vessels form a simple loop at the summit of the papilla, and the nerves are arranged in a similar manner.

4. The inferior surface is described as very smooth, presenting numerous follicles abundantly supplied with blood-vessels and nerves. These follicles are generally of a conical shape and surrounded with an arch composed of epithelial cells. The nerves may frequently be detected and followed over the surface of the follicle, but their extremities are hidden amidst the blood-vessels.

The author has illustrated the paper by several drawings.

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March 8, 1849.

The MARQUIS OF NORTHAMPTON, V.P., in the Chair.

A paper was read, entitled "Additional Observations on the Osteology of the *Iguanodon* and *Hylæosaurus*." By Gideon Algernon Mantell, Esq., LL.D., F.R.S., V.P.G.S., &c.

This memoir is supplementary to the author's former communications to the Royal Society on the same subject, and comprises an account of some important additions which he has lately made to our previous knowledge of the osteological structure of the colossal reptiles of the Wealden of the South-east of England.

The acquisition of some gigantic and well-preserved vertebræ and bones of the extremities from the Isle of Wight, and of other instructive specimens from Sussex and Surrey, induced the author to resume his examination of the detached parts of the skeletons of the Wealden reptiles in the British Museum, and in several private collections; and he states as the most important result of his investigations, the determination of the structure of the vertebral column, pectoral arch, and anterior extremities of the *Iguanodon*. In the laborious and difficult task of examining and comparing the numerous